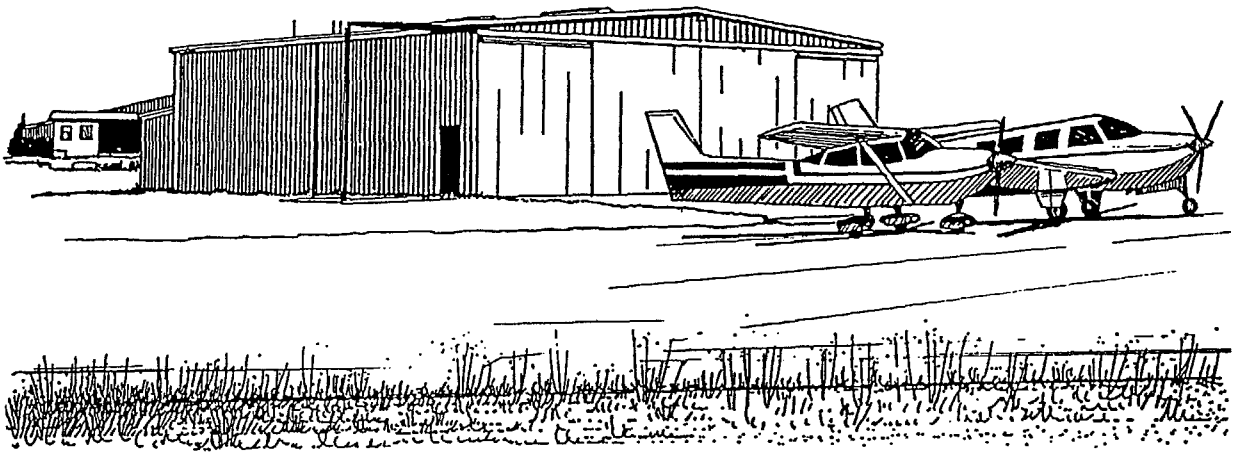
FACILITY REQUIREMENTS



Chapter Three
FACILITY REQUIREMENTS

Springerville Municipal Airport

The objective of this stage of the planning effort is to identify, in general terms, the adequacy and capacity of existing airport facilities, outline what new facilities may be needed, and when they may be needed to keep pace with forecast aviation demand. To identify future aviation facility needs, established planning criteria are applied to the results of aviation forecasts.

Once these needs are established, alternatives will be developed and evaluated in the following chapter to determine the most functional and efficient means for implementation.

AIRSIDE FACILITY REQUIREMENTS

Airside facilities are those that are related to the arrival and departure of aircraft. These facilities are comprised of the following items.

- Runways
- Taxiways
- Navigational Aids
- Marking and Lighting

The FAA has established criteria for use in the sizing and design of airfield facilities. The selection of the appropriate FAA design standards for the development of airfield facilities is based primarily upon the characteristics of the aircraft that are expected to use the airport. The most important aircraft characteristics in airfield planning are the approach speed and the wingspan of the most demanding aircraft using the airport now or expected to use the airport in the future. Planning for future aircraft use is particularly important

because design standards are used to plan separation distances between facilities that could be extremely costly to relocate at a later date as aircraft use characteristics change.

The FAA standards include airport design criteria relating to the size of an aircraft as well as its performance and speed. According to *FAA Advisory Circular (AC) 150/5300-13, Airport Design*, aircraft *Approach Categories* are based on 1.3 times the aircraft's stall speed in the landing configuration at its maximum certificated weight. The five approach categories used in airport planning are described below.

Category A: Speeds less than 91 knots.

Category B: Speeds 91 knots or more, but less than 121 knots.

Category C: Speeds 121 knots or more, but less than 141 knots.

Category D: Speeds 141 knots or more, but less than 166 knots.

Category E: Speeds 166 knots or more.

Categories A and B include small, propeller aircraft and certain smaller business jets, Categories C, D and E consist of the remaining business jets as well as larger jet and propeller aircraft generally associated with commercial and military use.

The second basic design criteria relates to the size of an airplane. The *Airplane Design Group* (ADG) is based upon wingspan. The six ADG groups are described as follows.

Group I: Wingspans of up to but not including 49 feet.

Group II: Wingspans of 49 feet up to but not including 79 feet.

Group III: Wingspans of 79 feet up to but not including 118 feet.

Group IV: Wingspans of 118 feet up to but not including 171 feet.

Group V: Wingspans of 171 feet up to but not including 214 feet.

Group VI: Wingspans of 214 feet up to but not including 262 feet.

FAA AC 150/5300-13 also identifies a coding system which is used to relate airport design criteria to the operational and physical characteristics of the airplanes intended to operate at the airport. This code, called the *Airport Reference Code (ARC)*, combines the aircraft Approach Category and the Airplane Design Group. With the selection of the most appropriate ARC, the airport design criteria contained within the Advisory Circular can be applied. Typically, the aircraft approach speed is critical for designing runways and runway-related facilities, while ADG categories are critical for identifying separation criteria involving taxiways and taxilanes.

Based on the forecasts described in Chapter Two, and in accordance with the FAA's design standards, general aviation activity at Springerville Municipal Airport would result in an **ARC B-II**. Although the airport does have operations by approach category C aircraft, their numbers do not warrant applying ARC C-II standards. The airfield facility requirements outlined in this chapter correspond to the design standards described in *FAA's AC 150/5300-13, Airport Design*. The following sections describe the scope of facilities that would be necessary to accommodate the airport's continued role as a general aviation facility, as well as

its potential role to accommodate expanded air taxi/commuter service.

RUNWAY

The adequacy of the existing runway system was analyzed from a number of perspectives including runway orientation, airfield capacity, runway length, and pavement strength. From this information, requirements for runway improvements were determined for Springerville Municipal Airport.

Runway Orientation

Wind conditions are of prime importance in determining runway orientation. Where prevailing winds are consistently from one direction, runways are generally oriented in that direction. In most areas, however, consistency of wind direction is not found. In such instances, a multiple runway system, with crosswind runways, may be required. The FAA has established guidelines recommending that airport runway systems provide 95 percent wind coverage. The 95 percent wind coverage is computed on the basis of the crosswind not exceeding 10.5 knots (12 mph) for ARC A-I and B-I, and 13 knots (15 mph) for ARC A-II and B-II.

Wind data used in this analysis was developed from historical information provided by Tucson Electric and Power. According to the windrose illustrated on **Exhibit 1B**, Runway 3-21 provides 93.14 percent coverage of the 12 mile per hour (mph) crosswind component and 95.91 percent coverage of the 15 mph crosswind component. Runway 11-29 provides 88.89 percent coverage of the 12 mph and 90.0 percent coverage of the 15 mph crosswind components. Combined the two runways provide a 98.89 percent coverage of the 12 mph crosswind component and 99.77 percent coverage of the 15 mph crosswind component.

According to this analysis, both runways need to be designed to accommodate aircraft in ADG I because neither runway can provide adequate 12 mph crosswind coverage alone. Runway 3-21, however, can adequately accommodate all Category A and B aircraft in ADG II which require compliance with the 15 mph crosswind component. Runway 3-21 should, therefore, be designed to ARC B-II and Runway 11-29 to ARC B-I standards.

Airfield Capacity

A demand/capacity analysis measures the capacity of the airfield facilities (i.e. runways and taxiways) in order to identify and plan for additional development needs. The capability of the airport's runway system to meet future operational demand can be determined without detailed analysis. The capacity of a single runway configuration, with a parallel taxiway, normally exceeds 150,000 operations annually. Since the forecasts for Springerville Municipal Airport indicate that by the end of the planning period the total annual operations will constitute less than 22,000, the existing two runway configuration will be capable of satisfying operational demand throughout the planning period.

Runway Length

The determination of runway length requirements for the airport are based on four primary factors.

- Critical aircraft type expected to use the airport.
- Mean maximum daily temperature of the hottest month.
- Runway gradient.
- Airport elevation.

Based on the results of forecasting efforts, the most demanding types of general aviation aircraft anticipated to use the airport on a regular basis are small aircraft under 12,500 pounds. While some larger aircraft weighing 60,000 pounds or less are expected to use the airport, their numbers of operations are not expected to be significant enough to warrant design consideration.

Aircraft operating characteristics are affected by three primary factors. They are the mean maximum temperature of the hottest month, the airport's elevation, and the gradient of the runway. The mean maximum temperature of the hottest month is 83.1 degrees Fahrenheit. The airport elevation is 7,052 feet mean sea level (MSL). The maximum difference in runway centerline elevation for Runway 3-21 is 42.5 feet and the maximum difference in runway centerline elevation for Runway 11-29 is 10.1 feet.

Table 3A, Runway Length Requirements provides the results of runway length requirement analysis for Springerville Municipal Airport. Based on *FAA Advisory Circular 150/5300-13*, to accommodate 100 percent of small aircraft under 12,500 pounds, the runway length would need to be 8,450 feet. The existing primary runway at the airport, Runway 3-21, is currently 8,425 feet in length. This runway length is adequate to accommodate 75 percent of aircraft of 60,000 pounds or less between 60 and 90 percent of useful loading.

The crosswind runway, Runway 11-29, need not be designed to the same length as Runway 3-21 because it is intended to accommodate only the small airplanes in ADG Group I. According to *FAA Advisory Circular 150/5325-4A, Runway Length Requirements for Airport Design*, the crosswind runway need only be designed to 80 percent of the length of the primary runway. It is recommended, therefore, that 11-29 be designed to between 4,800 and 6,000 feet in length. Runway 11-29 is currently 4,589 feet in length.

TABLE 3A Runway Length Requirements Springerville Municipal Airport	
AIRPORT AND RUNWAY DATA	
Airport Elevation	7,052 ft. MSL
Mean daily temperature of the hottest month	83.1° F
Maximum difference in runway centerline elevation	42.1 ft.
RUNWAY LENGTH RECOMMENDED FOR AIRPORT DESIGN	
Small airplanes[1] with less than 10 passenger seats	
75 percent of these small airplanes	5,950 feet
95 percent of these small airplanes	8,450 feet
100 percent of these small airplanes	8,450 feet
Small airplanes with more than 10 passenger seats	8,450 feet
Large airplanes of 60,000 pounds or less	
75 percent of these large airplanes at 60 percent useful load	7,930 feet
75 percent of these large airplanes at 90 percent useful load	9,030 feet
100 percent of these large airplanes at 60 percent useful load	11,430 feet
100 percent of these large airplanes at 90 percent useful load	11,430 feet
Possible Commuter Aircraft of 60,000 pounds or less	
De Haviland Dash 7 (54 passengers)	5,700 feet[2]
Beech 1900 and 1900D (19 passengers)	6,600 feet[2]
British Aerospace Jetstream 31 (19 passengers)	6,700 feet[2]
De Haviland Dash 8 (56 passengers)	10,100 feet[2]
Embraer 120 Brasilia (30 passengers)	10,500 feet[2]
Airplanes of more than 60,000 pounds	Aprx. 8,890 feet
NOTES: [1] A small airplane is an airplane of 12,500 pounds or less maximum takeoff weight. [2] Assumes maximum takeoff weight with proper flap setting.	
SOURCES: AC 150/5300-13, Airport Design, dated September 1, 1993. Airport planning design guides per specific aircraft type. Aerodrome Design Manual, 1984.	

Runway Width

According to *FAA Advisory Circular 150/5300-13*, a minimum runway width of 75 feet would meet the requirements for ARC B-II, representing the general aviation aircraft expected to use the airport over the planning period. It is, therefore, recommended that Runway 3-21 be maintained at 75 feet in width. The width of Runway 11-29, however, need only comply with B-I standards which require a

runway width of 60 feet. Runway 11-29 is currently 60 feet in width.

Runway Pavement Strength

Initially, the pavement strength of both runways should be tested to ensure compliance with design standards. In the future, in order to accommodate the anticipated business jets, the pavement strength of Runway 3-21 should be improved to 30,000 pounds single wheel loading (SWL). The pavement strength of Runway 11-29 should be maintained at 12,500 SWL, in order to accommodate the small aircraft of less than 12,500 pounds.

TAXIWAYS

Taxiways are constructed primarily to facilitate aircraft movements to and from the runway system. Some taxiways are necessary simply to provide access to aircraft parking aprons, whereas other taxiways may be warranted to provide safe and efficient use of the airfield.

The existing parallel and connecting taxiways at Springerville Municipal Airport are currently approximately 30 feet in width. According to *FAA Advisory Circular 150/5300-13*, taxiways at Springerville Municipal Airport should be 35 feet in width for ARC B-II. All taxiways should be maintained at the same pavement strength as the associated runway.

Currently, Runway 11-29 is not equipped with a parallel taxiway or parallel taxiway segments, even though it is used between 25 and 30 percent of the year. Without a parallel taxiway, arriving aircraft must taxi back on the runway to the parallel taxiway for Runway 3-21, which is located at roughly midfield. To improve safety for both arriving and taxiing aircraft, and to enhance overall airfield efficiency, the construction of a full-length parallel taxiway and connecting taxiways to runway 11-29 is recommended. The required separation between the runway centerline and the centerline of a parallel taxiway under ARC B-I standards for small aircraft is 150 feet: however, consideration should be given to designing this taxiway for larger B-II aircraft to provide greater access to the developable landside areas at the airport.

The required separation between the runway centerline and the centerline of the parallel taxiway for ARC B-II is 240 feet. The centerline for the parallel taxiway is currently 250 feet from the centerline of Runway 3-21; therefore, it is in compliance with the design guidelines. Should a precision instrument approach be provided to this runway, the separation standard would be 300 feet.

NAVIGATIONAL AIDS/VISUAL AIDS

Airport and runway navigational aid requirements are based on recommendations as depicted in *DOT/FAA Handbook 7031.2C, Airway Planning Standards Number One*, and *FAA Advisory Circular 150/5300-13*. Navigational aids provide visual, nonprecision, or precision guidance to a runway or the airport itself. The basic difference between a nonprecision and a precision navigational aid is that the latter provides electronic decent, alignment (course), and position guidance, while the nonprecision navigational aid provides only alignment and position information. The necessity of such equipment is predicated on safety considerations and operational needs. The type, purpose, and volume of aviation activity expected at the airport are factors

normally used in the determination of the airport's eligibility for navigation equipment.

It is recommended that a nonprecision Global Positioning System (GPS) instrument approach procedure be established to each runway end in the short-term. The new GPS technology has been found to be more affordable and extremely accurate. This instrument approach would assist pilots in landing at the airport during poor weather conditions and would allow for instrument approach training at Springerville Municipal Airport.

A visual approach landing aid is recommended for Runway 29 during the initial stage of development. There are several types of visual landing aids available; however, the FAA is currently supporting the installation of Precision Approach Path Indicators (PAPI) for most general aviation airports. The existing VASIs on Runway 3-21 should ultimately be replaced with the newer technology PAPIs. Other landing aids are the Runway End Identifier Lights (REIL) which are installed at the runway ends to help pilots make positive identification of the runway in poor weather or reduced visibility conditions. REILs are also commonly provided on runways equipped with nonprecision instrument approaches.

MARKING AND LIGHTING

Lighting on runways, taxiways, and aprons provides security and enhances safety for aircraft movements during night operations. At the present time, Medium Intensity Runway Lighting (MIRL) is available on Runway 3-21 and Runway 11-29. Appropriate runway markings will be required according to the type of approach available to the airport. Currently marked for visual approaches, the runway markings should be upgraded to nonprecision markings at such time as the approach is available.

Exhibit 3A, Airside Facility Requirements, located at the end of this chapter, provides a summary of the airside requirements discussed in this section. A discussion of landside requirements follows in the remaining paragraphs.

LANDSIDE FACILITY REQUIREMENTS

Landside facilities are those necessary for handling of aircraft, pilot and passengers while on the ground. These facilities provide the essential interface between the air and ground transportation modes. These areas will be subdivided into two sections: general aviation facilities and support facilities.

GENERAL AVIATION FACILITIES

Components of the general aviation landside complex include the following types of facilities.

- Hangars
- Aircraft Parking Apron
- General Aviation Terminal
- Automobile Parking

Hangars

The demand for hangar facilities is dependent upon the quantity and types of aircraft expected to be based at the airport. Actual percentages of based aircraft desiring hangar space will vary across the country as a function of local climatic conditions, airport security and owner preferences.

The percentage of based aircraft hangared normally ranges from 30 to 80 percent in areas with extreme weather conditions. In Arizona, at those locations where hangar facilities are available, demand for hangars varies between 60 and 80 percent. Due to the weather in the Springerville/Eager area, it was assumed that 60 percent of the owners of single-engine aircraft would desire hangars over tiedowns and that 80 percent of the owners of multi-engine, and 100 percent of the owners of turboprop, turbojet and rotorcraft aircraft would prefer hangar facilities. It was estimated that these percentages would remain constant over the planning period.

Consideration must also be given to the types of hangars needed at the airport. Generally, the primary users of conventional hangars are owners of larger based aircraft who desire convenient access to maintenance and related services. T-hangars are predominantly used to store single and light twin-engine aircraft. It was assumed that 10 percent of the single engine, 25 percent of the twin engine, and 100 percent of the turbine-powered aircraft and helicopters which preferred hangarstorage would be stored in an conventional hangar.

A planning standard of 1,500 square feet (s.f.) per T-hangar was used for the dimensions of these facilities. Space requirements for conventional hangar space were based on 1,000 s.f. per single engine and helicopter, 2,000 s.f. per twin engine and turboprop aircraft, and 2,500 s.f. per jet aircraft. The aircraft maintenance portion of the hangar is normally equivalent to approximately 10 percent of the total hangar storage area. This maintenance area will be in addition to the total individual hangar requirements.

Currently, only one privately owned port-a-port and the FBO's 10,000 s.f. conventional hangar are located on the airport. Over the planning period, it is anticipated that additional facilities will be required. **Table 3B, Forecast Hangar Requirements** outlines the projected hangar requirements throughout the planning period.

TABLE 3B
Forecast Hangar Requirements
Springerville Municipal Airport

	Available	1995	2000	2005	2015
Based Aircraft	26	29	34	40	48
Aircraft to be Hangared					
Single Engine	N/A	16	17	20	22
Multi Engine	N/A	2	3	4	6
Turboprop	N/A	0	1	1	3
Turbojet	N/A	0	0	0	1
Rotorcraft	N/A	0	0	1	1
Total	N/A	18	21	26	33
T-Hangar Positions	**1***	**15**	**17**	**23**	**30**
T-Hangar Area (s.f.)	N/A	22,500	25,500	34,500	45,000
Aircraft Storage Area (s.f.)	N/A	4,000	6,000	7,000	13,500
Maintenance Area (s.f.)	N/A	2,700	3,200	4,200	5,900
Total Conventional Hangar Area (s.f.)	**10,000**	**6,700**	**9,200**	**11,200**	**19,400**

NOTES: * Privately owned
N/A Not Available

Aircraft Parking Apron

Adequate aircraft parking apron should be provided to accommodate those local aircraft not stored in hangars as well as transient aircraft. At Springerville Municipal Airport, no specific apron area has been designated for either local or transient parking. In determining future apron requirements, it is necessary to examine local and transient tiedown facilities as separate entities. The local apron should at least meet the demand established by the unhangared based aircraft, or a total need for 15 local tiedown positions by the year 2015. The number of based aircraft requiring tiedowns during the planning period are depicted in **Table 3C, Forecast Apron Requirements.**

The minimum number of itinerant spaces can be estimated based on a knowledge of busy day operations at the airport. Given that a number of the operations are related to tourism, the minimum number of transient spaces required at the airport was estimated as 40 percent of the busy day itinerant operations.

A planning criteria of 300 square yards (SY) per local aircraft and 360 SY per transient aircraft was used for the analysis presented in **Table 3C.** These space requirements do not include aircraft movement areas. The analysis indicates that a minimum of 59 tiedowns will be required by the end of the planning period to accommodate both local and itinerant traffic. While approximately 51 are currently available at the airport,

their location and spacing will need to be examined in the following chapter.

The 1995 apron requirements for the U.S. Forest Service were estimated by the Forest Service. The apron requirements represent the Forest Service's needs at Springerville Municipal Airport during their peak months of operation (May through July). The 1995 apron area would accommodate four fixed-wing aircraft, two smoke jumpers aircraft (including the DC-3), and one helicopter. During the remainder of the year, significantly less apron area is needed. A slight increase in apron area requirements is anticipated over the planning period in order to accommodate more aircraft.

TABLE 3C
Forecast Apron Requirements
Springerville Municipal Airport

	Available	1995	2000	2005	2015
General Aviation					
Total Tiedowns	51	33	41	50	59
Local	N/A	11	13	14	15
Transient	N/A	22	28	36	44
GA Apron Area (SY)	28,150*	11,220	13,980	17,160	20,340
U.S. Forest Service					
U.S.F.S. Apron Area (SY)	N/A	14,000	15,000	16,000	18,000
Total Apron Area (SY)	**28,150***	**25,220**	**28,980**	**33,160**	**38,340**

NOTES: * Includes aircraft movement areas.
N/A -- Not Available.

General Aviation and Air Taxi/Commuter Terminal(s)

General aviation and air taxi/commuter terminal facilities serve several functions, including: waiting area, administrative and management offices, pilot's lounge and flight planning area, meeting facilities, food services, storage rooms, restrooms, and various other needs. This space is not necessarily limited to a single building and can be provided by the airport sponsor or an FBO facility (as at Springerville Municipal Airport). The methodology utilized to examine terminal building capacity generally relates square footage requirements for terminal facilities to the number of design hour pilots and passengers. Space requirements were determined for Springerville Municipal Airport using a standard of 75 square feet per general aviation and air taxi/commuter design hour pilot and passenger. Based on this standard, a total terminal size of 3,375 s.f. would meet the terminal needs throughout the planning period. The existing FBO office/terminal building is approximately 2,000 square feet.

Automobile Parking

Vehicle parking demand related to general aviation activity at Springerville Municipal Airport is largely dependent upon the level of operations and the type of general aviation facilities and activities associated with the airport. General aviation automobile parking facilities are determined under guidelines set forth in FAA publications.

The terminal facility public parking area requirements were based upon the number of design hour pilots and passengers for both general aviation and air taxi/commuter services. The total number of parking positions was projected based on 1.3 spaces per design hour passenger and 350 square feet per automobile parking space.

General aviation parking requirements were calculated under the assumption that 25 percent of the based aircraft will require automobile parking positions at any one time. The amount of parking area required per space is the same as that used in determining terminal area parking requirements.

Table 3D, Automobile Parking Requirements, reflects the minimum parking facilities that will be required through the end of the planning period. **Exhibit 3B, General Aviation Landside Requirements**, located at the end of this chapter, summarizes the major facility requirements for the general aviation landside area of Springerville Municipal Airport.

TABLE 3D
Automobile Parking Requirements
Springerville Municipal Airport

	Available	1995	2000	2005	2015
Design Hour Pilots & Passengers	N/A	14	20	29	45
Terminal Vehicle Spaces	N/A	19	26	38	59
Parking Area (s.f.)	N/A	6,650	9,100	13,300	20,650
General Aviation Spaces	22	7	9	10	12
Parking Area (s.f.)	7,500*	2,450	3,150	3,500	4,200
Total Parking Area (s.f.)	**7,500***	**9,100**	**12,250**	**16,800**	**24,850**

NOTE: * Does not include long-term parking area.

SUPPORT FACILITIES

Other facilities needed to support airfield and landside activities have also been estimated for Springerville Municipal Airport and are described in the following paragraphs. These include facility requirements for Fuel Storage and Airport Access.

FUEL STORAGE

Fuel at airports is normally stored in underground tanks. This practice has undergone a great deal of scrutiny in the past few years because of the potential for fuel leaks and contamination of soil and groundwater. The State and Federal governments, consequently, have increased

their installation, design and monitoring requirements for underground fuel storage tanks. The location of the fuel storage area depends upon the airport's operational activity and management procedures. A remote location will require the use of a servicing vehicle to make the fuel available to the aircraft in the apron area.

Fuel storage requirements for Springerville Municipal Airport were projected following an analysis of the fuel use characteristics at the airport for the past year. The average rate of fuel consumption for this period was 4.9 gallons per operation. This ratio can be expected to increase as the size of the aircraft fleet increases.

Table 3E, Monthly Fuel Storage Requirements, provides a forecast of the monthly fuel storage capacity that will be required at Springerville Municipal Airport for general aviation activity. Storage requirements are based on a one month, on-hand supply; however, more frequent deliveries can reduce the fuel storage requirement.

The airport is currently equipped with three underground storage tanks with a total capacity of 16,000 gallons. It is recommended that above ground storage tanks be installed to meet the storage requirements provided in **Table 3E.**

TABLE 3E
Monthly Fuel Storage Requirements
Springerville Municipal Airport

	Available	1995	2000	2005	2015
Annual Operations	N/A	10,440	13,600	17,600	22,100
Peak Month Operations	N/A	1,786	2,327	3,012	3,781
Average Fuel Ratio	N/A	4.9	5.0	5.0	5.1
Total Monthly Fuel Storage (gallons)	**16,000***	**8,800**	**11,600**	**15,100**	**19,300**

NOTE: * Total fuel storage currently available.

AIRPORT ACCESS

Access to Springerville Municipal Airport is available via Airport Road, a paved two-lane road, entering on the east side of the airport. No access is currently available to the west side of the airport property. Should the west side be developed, additional access will be necessary. A by-pass to the current SR 260 is being considered west of the airport, this roadway could provide access to the western part of the airport property, when developed.

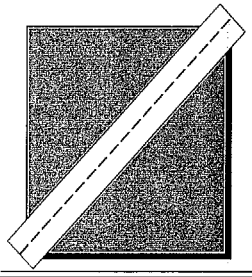
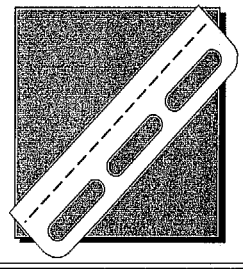
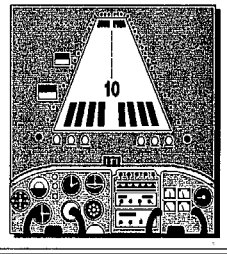
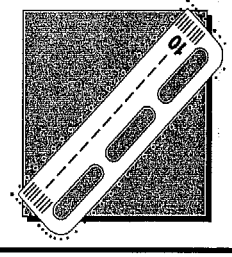
Airport access will be evaluated further in **Chapter Four, Alternatives.**

Currently, vehicles entering the airport have access to the runway/taxiway system. By allowing vehicle traffic access to the aircraft movement area, serious conflicts can arise. The FAA recommends that vehicle access be limited to automobile parking areas, thereby reducing the potential for vehicle-aircraft interactions. Short term, limited access may be provided to load and unload aircraft.

CONCLUSIONS

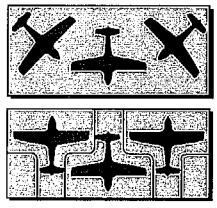
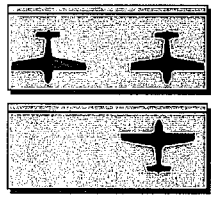
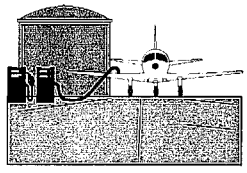
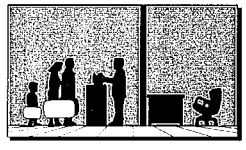
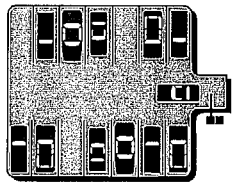
In order to accommodate future general aviation activity a number of changes will be needed in the airside and landside facilities at Springerville Municipal Airport. **Exhibits 3A, Airside Facility Requirements,** and **3B, General Aviation Landside Requirements,** provide a summary of the facility needs identified.

The next step in the master planning process is to analyze alternatives that can accommodate these requirements. The next chapter will provide this analysis and recommend the best alternative for the future development of the Springerville Municipal Airport.

	EXISTING	2000	2005	2015
RUNWAYS 	Runway 3-21 8,425' x 75' 12,500 lbs SWL Runway 11-29 4,589' x 60' Unknown	Runway 3-21 Same 30,000 lbs SWL Runway 11-29 6,000' x 60' 12,500	Runway 3-21 Same Runway 11-29 Same	Runway 3-21 Same Runway 11-29 Same
TAXIWAYS 	Runway 3-21 8,425' x 30' Runway 11-29 None	Runway 3-21 8,425' x 35' Runway 11-29 6,000' x 25'	Runway 3-21 Same Runway 11-29 Same	Runway 3-21 Same Runway 11-29 Same
NAVIGATIONAL AIDS 	Beacon Runway 3-21 VASI (both) Runway 11-29 PAPI (both)	Beacon Runway 3-21 Same GPS (both) REIL (both) Runway 11-29 PAPI (both) GPS (both) REILs (both)	Beacon Runway 3-21 PAPI (both) Same Runway 11-29 Same	Beacon Runway 3-21 Same Runway 11-29 Same
LIGHTING and MARKING 	Runway 3-21 MIRL Visual (both) Runway 11-29 MIRL Visual (both) Taxiways Centerline Reflectors	Runway 3-21 MIRL Non Precision (both) Runway 11-29 MIRL Non Precision (both) Taxiways MITL Centerline	Runway 3-21 Same Runway 11-29 Same Taxiways Same	Runway 3-21 Same Runway 11-29 Same Taxiways Same

SPRINGERVILLE AIRPORT

Exhibit 3A
GENERAL AVIATION AIRSIDE REQUIREMENTS

	EXISTING	2000	2005	2015
HANGARS				
	Conventional Hangars (S.F.) 10,000	9,200	11,200	19,400
	T-Hangars 1*	17	23	30
	* Privately owned			
APRON TIE-DOWNS				
	Total Tiedown Postions 51	41	50	59
	USFS Apron Area (S.Y.) N/A	15,000	16,000	18,000
	Total Apron Area (S.Y.) 28,150*	28,980	33,160	38,340
	* Includes aircraft movement area.			
FUEL STORAGE				
	Monthly Storage Requirements (Gallons) 16,000	11,600	15,100	19,300
GENERAL AVIATION TERMINAL				
	General Aviation (S.F.) N/A	1,200	1,800	2,850
	Air Taxi/Commuter (S.F.) N/A	300	375	525
	Total Terminal Area (S.F.) 2,000	1,500	2,175	3,375
AUTO PARKING				
	Parking Positions 22	35	48	71
	Area (S.F.) 7,500	12,250	16,800	24,850

SPRINGERVILLE AIRPORT

Exhibit 3B
GENERAL AVIATION LANDSIDE REQUIREMENTS